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Abstract

In a MIMO system, rate control is achieved with an inner loop that selects rates for data streams sent via a MIMO channel and an outer loop that regulates the operation of the inner loop. For the inner loop, SNR estimates are obtained for each data stream based on received pilot symbols and/or received data symbols. An effective SNR is derived for each data stream based on the SNR estimates, a diversity order, a MIMO backoff factor, and an outer loop backoff factor for the data stream. The rates are then selected for the data streams based on the effective SNRs for the data streams. The outer loop adjusts the outer loop backoff factor for each data stream based on the performance (e.g., packet errors and/or decoder metrics) for the data stream.